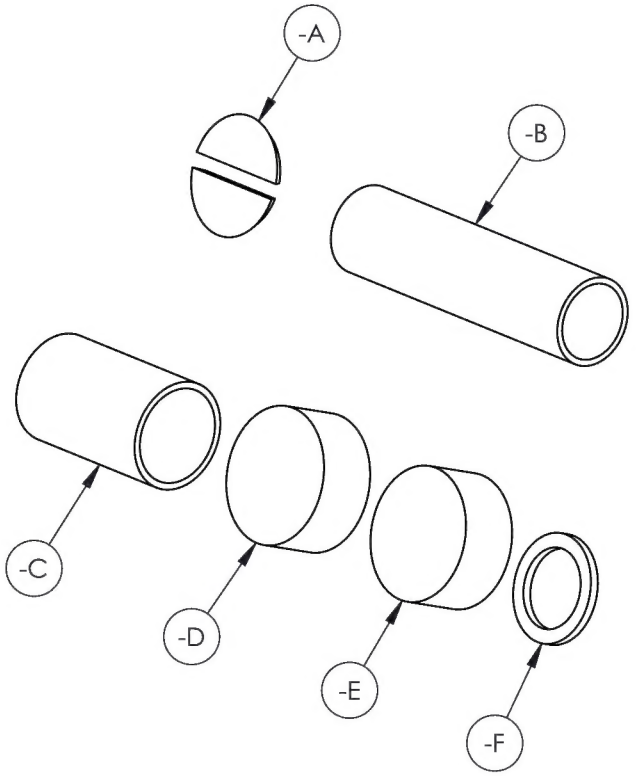
REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
A		CH'D TITLEBLOCK & REVISION BLOCK, CH'D TOOL NUMBER FROM RB67828.	8/12/2009	RJC	RW
1		**-B** & **-C** MATERIAL CH'D WAS SCHEDULE 40 IS DOM SEAMLESS.	10/16/2013	RJC	GE
2	17-0054	**-A**, **-C**, **-D**, **-E**, **-F** ADDED NOTE ENGRAVE P/N. **-A** CH'D MATERIAL WAS 4130 IS 4140/4142. **-B**, **-C**, **-D**, **-E**, **-F** CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03. **-B** CH'D DIM'S WAS Ø2.875 IS Ø2.88, WAS Ø2.5 IS (Ø2.469), WAS 11 IS 11.00. ADDED NOTE ENGRAVE T/N, S/N, "MADE IN USA" P/N. CH'D MATERIAL WAS DOM SEAMLESS IS SCHEDULE 40. **-C** CH'D DIM'S WAS Ø3.5 IS Ø3.50, WAS Ø3.094 IS (Ø3.068). CH'D MATERIAL WAS DOM SEAMLESS IS SCHEDULE 40. **-D** CH'D DIM WAS Ø4.4 IS Ø4.40, WAS 2 IS 2.00. **-E** CH'D DIM WAS Ø4.3 IS Ø4.30, WAS 2 IS 2.00. ADDED NOTE ENGRAVE "E". **-F** CH'D DIM WAS Ø3.5 IS Ø3.50, WAS .3 IS .30. CH'D MATERIAL WAS STEEL IS 4140/4142.	3/3/2017	RJC	JAG



ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
			-A	1	PRESS BEARING CUPS OUT OF HUB	4140/4142		2
			-B	1	PRESS BEARING CUPS OUT OF HUB	SCHEDULE 40		3
			-C	1	PRESS LOWER BEARING CONE ON SLEEVE BUSHING	SCHEDULE 40		4
			-D	1	PRESS UPPER BEARING CUP INTO HUB	6061		5
			-E	1	PRESS LOWER BEARING CUP INTO HUB	6061		6
			-F	1	IN PLACE OF UPPER SEAL RETAINER WHILE ADJUSTING ROTATIONAL DRAG	4140/4142		7

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828 REV 2

MAT'L
HEAT TREAT
FINISH
SPEC

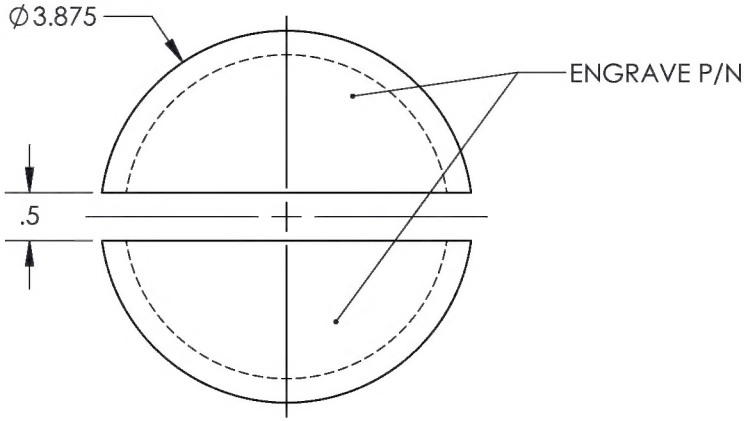
DRAWN BY: PERRITT
CHECKED: DUERFELDT
OPPS APPR: ANDERSON
QA APPR: LINDSAY
APPROVED: GILBERT

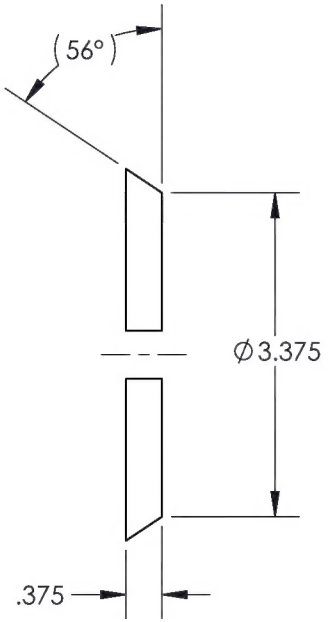
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

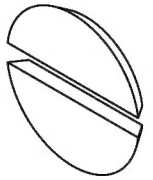
USED ON MODEL: MD HELICOPTERS

SCALE 1:6 DATE 7/1/2005 SHEET 1 OF 7

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	17-0054	**-A** ADDED NOTE ENGRAVE P/N. CH'D MATERIAL WAS 4130 IS 4140/4142.	3/3/2017	RJC	JAG







(-A)

PRESS BEARING CUPS OUT OF HUB

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-A REV 2

MAT'L	4140/4142
HEAT TREAT	
FINISH	BLACK OXIDE
SPEC	QMSI-6.2.2, B.O. REV D
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .005 FRACTIONS ± 1/8
.XX ± .01 ANGLES ±.5°
.X ± .1 SURFACES = 125

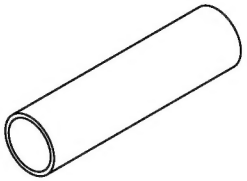
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

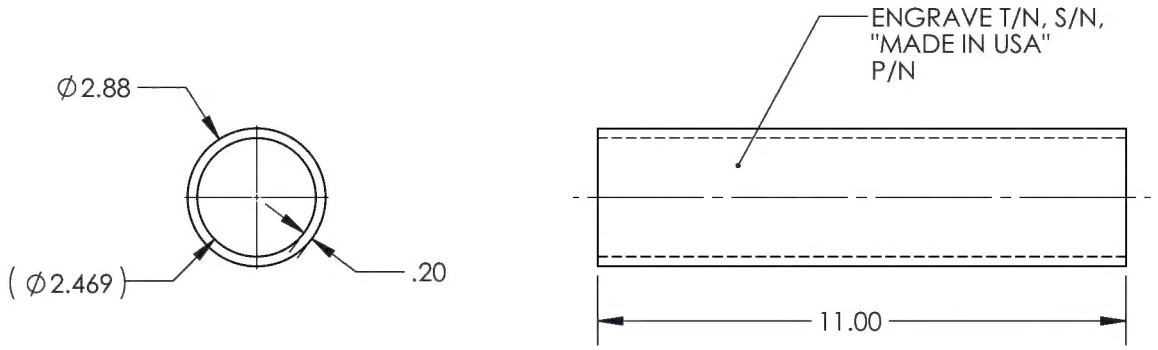
USED ON MODEL: MD HELICOPTERS

SCALE 1:2 | DATE 7/1/2005 | SHEET 2 OF 7

REVISIONS

REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		**-B** MATERIAL CH'D WAS SCHEDULE 40 IS DOM SEAMLESS.	10/16/2013	RJC	RW
2	17-0054	**-B** CH'D DIM'S WAS Ø2.875 IS Ø2.88, WAS Ø2.5 IS (Ø2.469), WAS 11 IS 11.00. ADDED NOTE ENGRAVE T/N, S/N, "MADE IN USA" P/N. CH'D MATERIAL WAS DOM SEAMLESS IS SCHEDULE 40. CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03. ADDED DIM .20.	3/3/20107	RJC	JAG





(-B)

PRESS BEARING CUPS OUT OF HUB

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-B REV. 2

MAT'L	SCHEDULE 40
HEAT TREAT	
FINISH	BLACK OXIDE
SPEC	QMSI-6.2.2, B.O. REV D
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

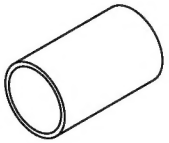
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

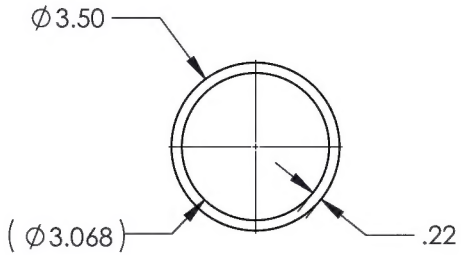
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

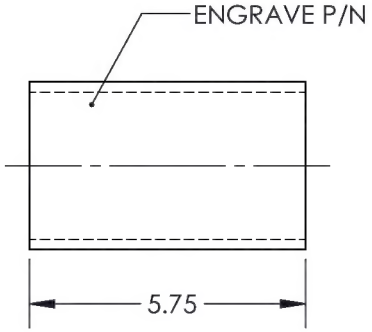
USED ON MODEL: MD HELICOPTERS

SCALE 1:4 DATE 7/1/2005 SHEET 3 OF 7

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		**-C** MATERIAL CH'D WAS SCHEDULE 40 IS DOM SEAMLESS.	10/16/2013	RJC	
2	17-0054	**-C** CH'D DIM'S WAS Ø3.5 IS Ø3.50, WAS Ø3.094 IS (Ø3.068). ADDED NOTE ENGRAVE P/N. CH'D MATERIAL WAS DOM SEAMLESS IS SCHEDULE 40. CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03.	3/3/2017	RJC	JAG







-C

PRESS LOWER BEARING CONE ON SLEEVE BUSHING

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-C REV. 2

MAT'L	SCHEDULE 40
HEAT TREAT	
FINISH	BLACK OXIDE
SPEC	QMSI-6.2.2, B.O. REV D
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

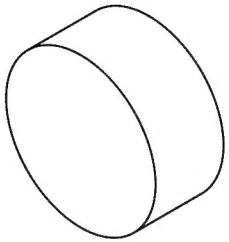
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

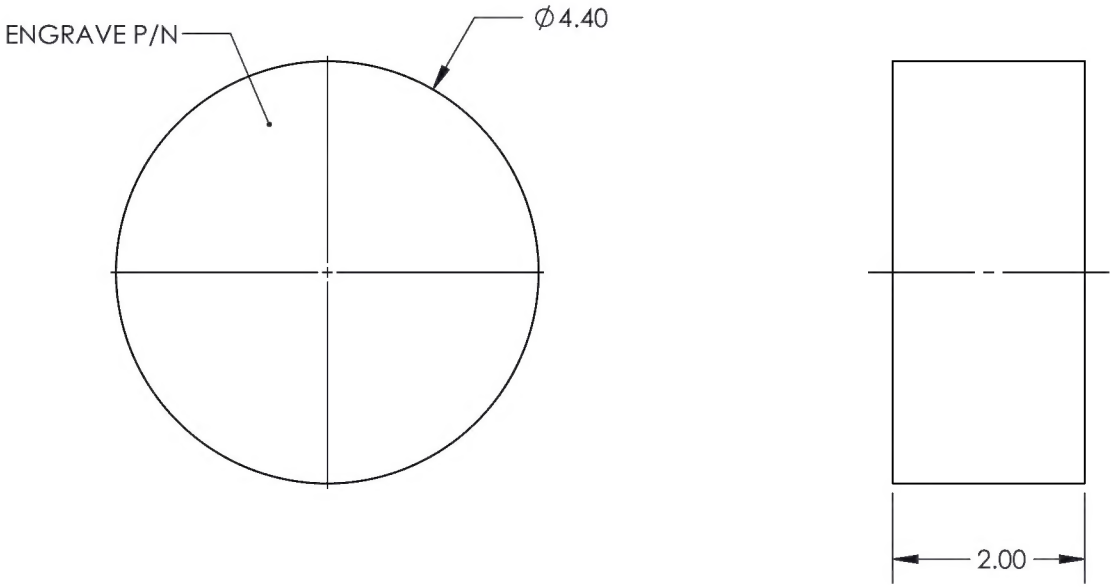
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: MD HELICOPTERS

SCALE 1:4 DATE 7/1/2005 SHEET 4 OF 7

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	17-0054	**-D** CH'D DIM WAS Ø4.4 IS Ø4.40, WAS 2 IS 2.00. ADDED NOTE ENGRAVE P/N. CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03.	3/3/2017	RJC	JAG





(-D)

PRESS UPPER BEARING CUP INTO HUB

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-D REV. 2

MAT'L	6061
HEAT TREAT	
FINISH	BLACK ANODIZE
SPEC	MIL-A-8625F, TYPE II, CLASS II
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

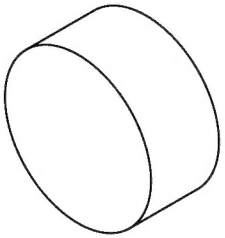
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

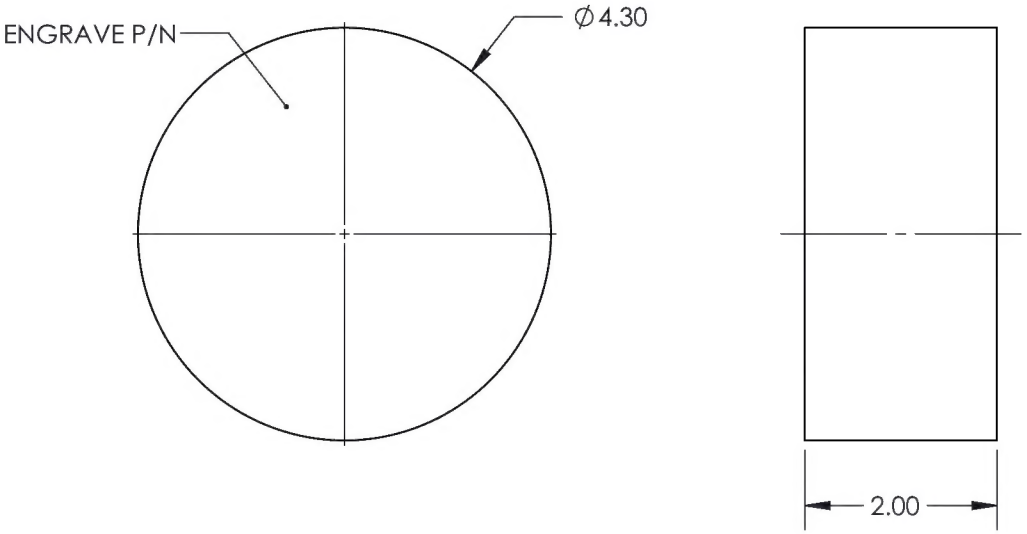
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: MD HELICOPTERS

SCALE 1:2 | DATE 7/1/2005 | SHEET 5 OF 7

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	17-0054	**-E** CH'D DIM WAS Ø4.3 IS Ø4.30, WAS 2 IS 2.00. ADDED NOTE ENGRAVE P/N. CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03.	3/3/2017	RJC	JAG





(-E)

PRESS LOWER BEARING CUP INTO HUB

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-E REV. 2

MAT'L	6061
HEAT TREAT	
FINISH	BLACK ANODIZE
SPEC	MIL-A-8625F, TYPE II, CLASS II
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

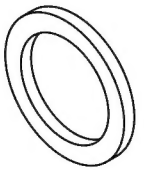
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125

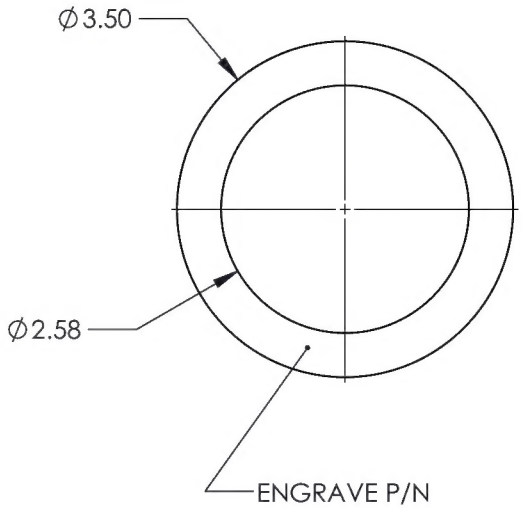
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

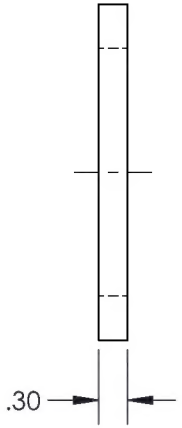
USED ON MODEL: MD HELICOPTER

SCALE 1:2 DATE 7/1/2005 SHEET 6 OF 7

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	17-0054	**-F** CH'D DIM WAS Ø3.5 IS Ø3.50, WAS .3 IS .30. ADDED NOTE ENGRAVE P/N. CH'D MATERIAL WAS STEEL IS 4140/4142. CH'D TOLERANCES FROM ±.005 TO ±.010, FROM ±.01 TO ±.03.	3/3/2017	RJC	JAG







(-F)

IN PLACE OF UPPER SEAL RETAINER WHILE ADJUSTING ROTATIONAL DRAG

DART AEROSPACE

TITLE: M/R HUB BEARING TOOLS

DWG NO. RBT67828-F REV. 2

MAT'L	4140/4142
HEAT TREAT	
FINISH	BLACK OXIDE
SPEC	QMSI-6.2.2, B.O. REV D
DRAWN BY:	PERRITT
CHECKED:	DUERFELDT
OPPS APPR:	ANDERSON
QA APPR:	LINDSAY
APPROVED:	GILBERT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
.XXX ± .010 FRACTIONS ± 1/8
.XX ± .03 ANGLES ±1°
.X ± .1 SURFACES = 125
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
2. DIMENSIONAL LIMITS APPLY AFTER PLATING
3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009

USED ON MODEL: MD HELICOPTERS

SCALE 1:2 DATE 7/1/2005 SHEET 7 OF 7